ONTARIO MINISTRY OF ENVIRONMENT
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OPERATING SUMMARY

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1974
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TOWN OF
PALMERSTON
WATER POLLUTION CONTROL PLANT

1974

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MINISTRY OF THE
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1974

Palmerston : water pollution
control plant.

81866

Ontario

MINISTRY OF THE ENVIRONMENT

MINISTER
Honourable William G. Newman

DEPUTY MINISTER
E. Biggs

ASSISTANT DEPUTY MINISTER
REGIONAL OPERATIONS
J. Barr

REGIONAL OPERATIONS DIVISION

DIRECTOR, WEST-CENTRAL REGION
C. Macfarlane

MANAGER, UTILITY OPERATIONS
B. Hansler

PALMERSTON

WATER POLLUTION CONTROL PLANT

MINISTRY OF THE ENVIRONMENT

1974 ANNUAL OPERATING SUMMARY

prepared by

Plant Performance Unit

TECHNICAL SERVICES BRANCH

T. Cross, Director

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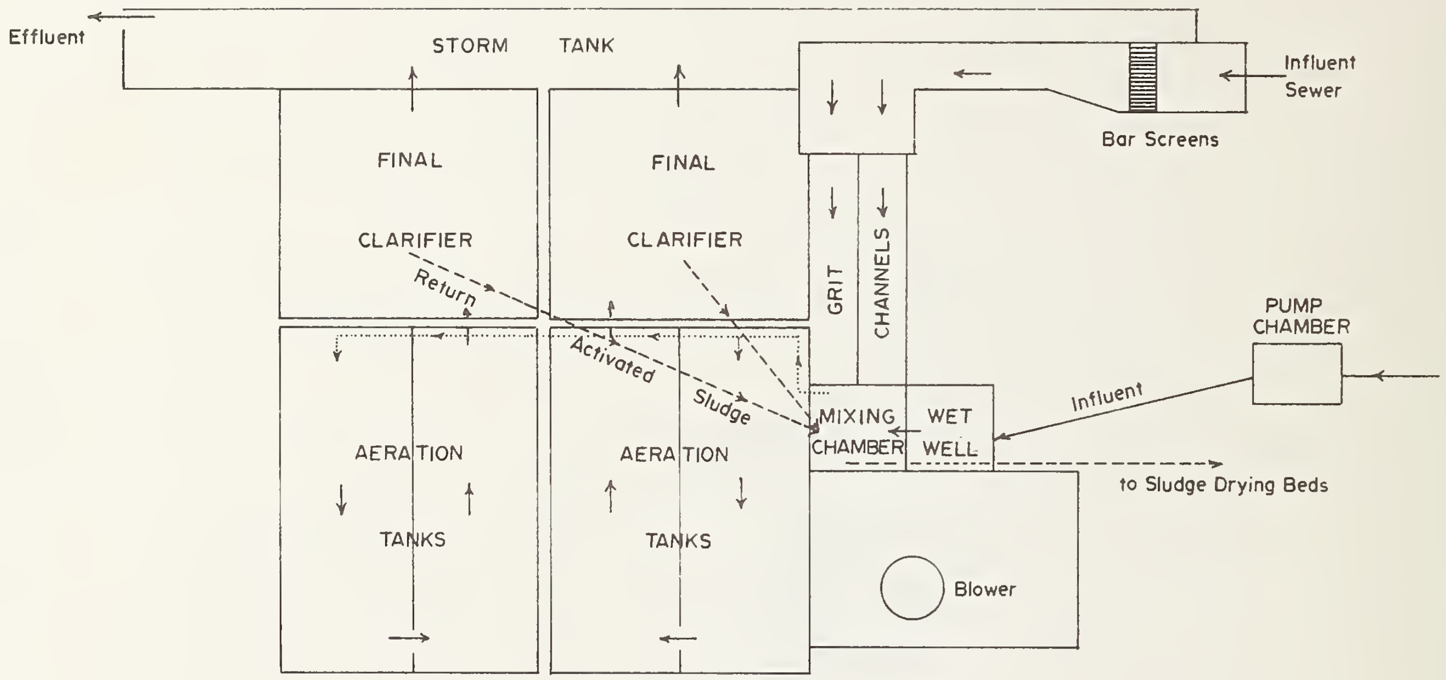


TOWN OF
PALMERSTON
WATER POLLUTION CONTROL PLANT

DESIGN DATA

Project: Town of Palmerston WPCP	
Project No:	1-0216-69
Treatment:	High Rate Activated Sludge
Design Flow:	0.34 MIGD (estimated)
BOD:	Raw sewage 76 mg/1 (estimated)
SS:	Raw sewage 60 mg/1 (estimated)

PRETREATMENT

RAW SEWAGE PUMPING:

1, centrifugal pump

GRIT REMOVAL:

Two grit channels, each 16' x 2' x 4.1'
Volume (each) 820 I. Gal Detention (each) 3.5 min.

SCREENING:

Bar screens at influent sewer

BIOLOGICAL TREATMENT:

AERATION TANKS:

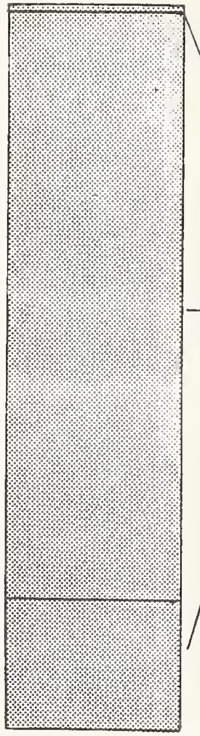
Four, each 28' x 7.6' x 8.3'
Volume (total) 44,200 I. Gal.
Detention: 3.2 hours
Blower 1, size 340 cfm at 8 psi

FINAL CLARIFIERS:

Two, each 15.6' x 15.6' Hopper Bottom
Volume (total) 28,000 I. Gal.
Detention: 2.0 hours
Overflow rate: 700 gal/ft^2/day

ANNUAL COSTS

1974 OPERATING COSTS



● SALARIES & WAGES	
● EMPLOYEE BENEFITS	
● TRANSPORTATION & COMMUNICATIONS	<1 %
● SERVICES	81 %
● SUPPLIES & EQUIPMENT	18 %
● AQUISITION/CONSTRUCTION OF PHYSICAL ASSETS	
● TRANSFER PAYMENTS	
● OTHER TRANSACTIONS	

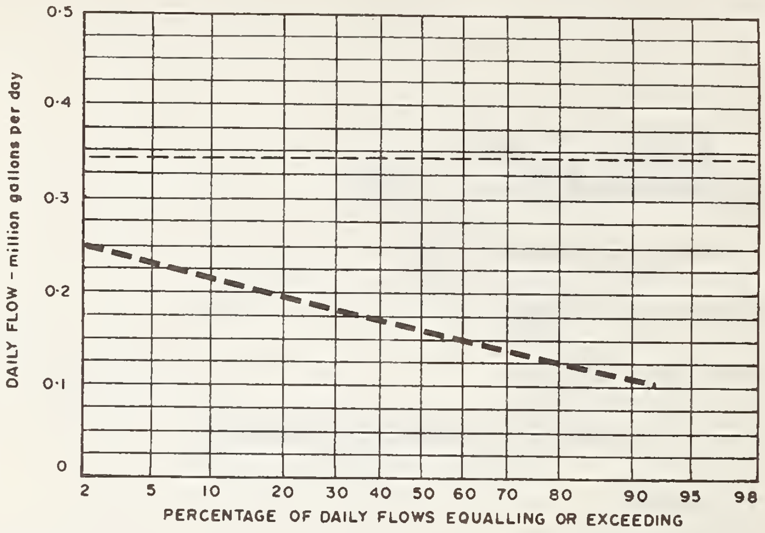
YEARLY OPERATING COSTS

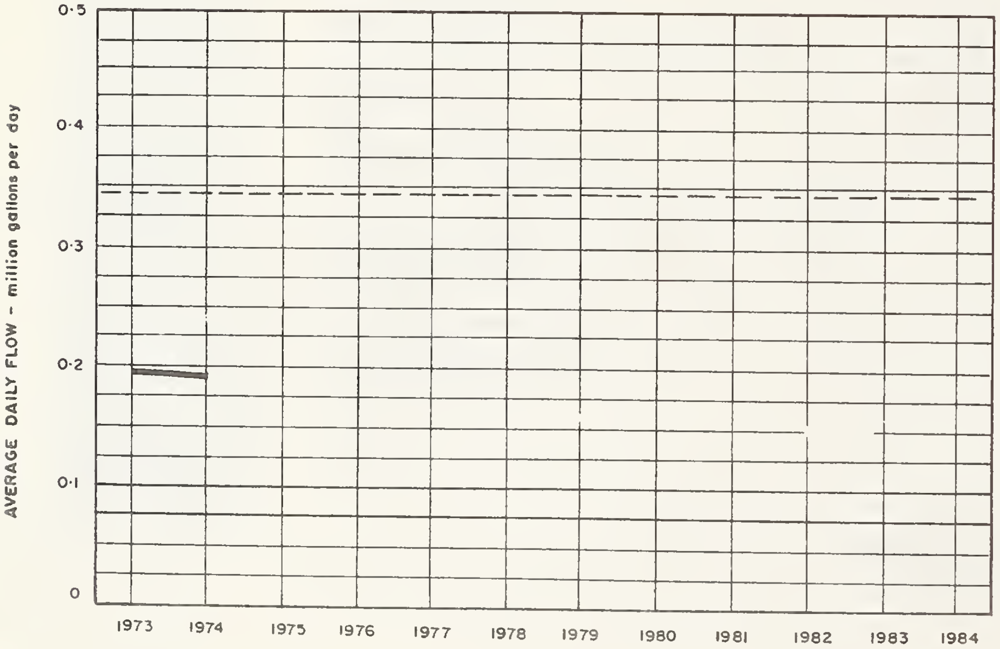
YEAR	SEWAGE TREATED in million gallons	TOTAL OPERATING COSTS	UNIT COSTS	
			$/M.G	¢/lb BOD
1974	70.7	13,012	184	42

OPERATING EXPENDITURES

Regular Staff	$ -	$
Casual (Unclassified) Staff	-	
TOTAL SALARIES AND WAGES		-
TOTAL EMPLOYEE BENEFITS		-
TOTAL TRANSPORTATION AND COMMUNICATIONS		100
Insurance	524	
Sludge Haulage	9,984	
Repairs and Maintenance	-	
Other Services	-	
TOTAL SERVICES		10,508
Machinery and Equipment	-	
Chemicals	-	
Utilities	2,404	
Other Supplies and Equipment	-	
TOTAL SUPPLIES AND EQUIPMENT		2,404
TOTAL AQUISITION/CONSTRUCTION OF PHYSICAL ASSETS		
TOTAL TRANSFER PAYMENTS		
OTHER TRANSACTIONS		
GRAND TOTAL	GRAND TOTAL	$ 13,012

PROCESS DATA
FLOWS



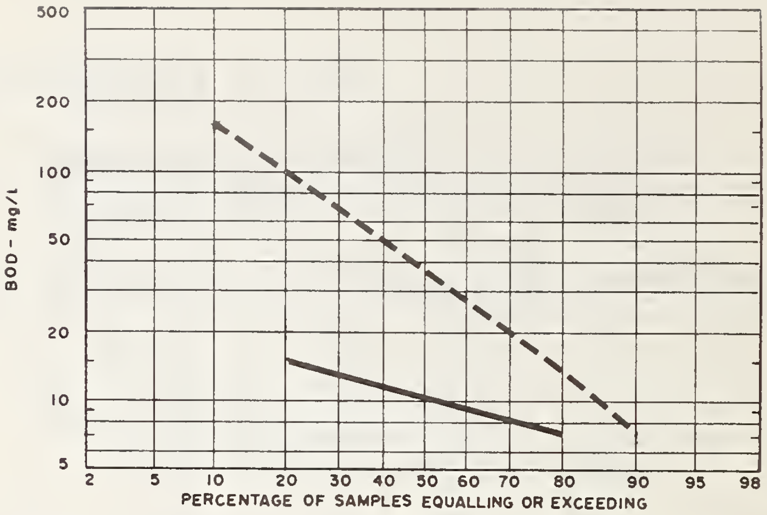


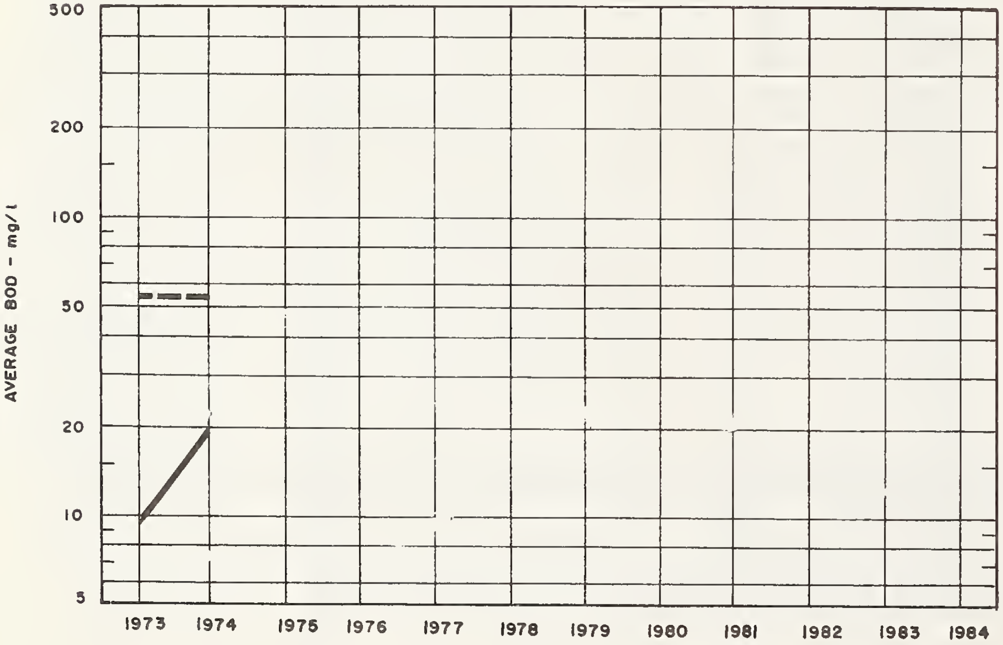
DESIGN CAPACITY – – – – – – –

PLANT PERFORMANCE

MONTH	FLOWS			BIOCHEMICAL OXYGEN DEMAND				SUSPENDED SOLIDS				PHOSPHORUS	
	TOTAL FLOW million gallons	AVERAGE DAY mil. gal	MAXIMUM DAY mgd	INFLUENT mg/l	EFFLUENT mg/l	REDUCTION		INFLUENT mg/l	EFFLUENT mg/l	REDUCTION		INFLUENT mg/l P	EFFLUENT mg/l P
						%	10^3 pounds			%	10^3 pounds		
JAN	6.20	.20	.22	170	19	89	9.4	140	20	86	7.4	3.2	4.0
FEB	5.88	.21	.24	70	9	87	3.6	85	20	76	3.8	7.2	3.0
MAR	7.24	.23	.26	81	10	88	5.1	72	18	75	3.9	5.8	2.9
APR	7.20	.24	.24	13	7	46	.4	18	15	17	.2	1.7	1.2
MAY	7.13	.23	.24	36	7	81	2.1	60	20	67	2.9	3.4	1.2
JUNE	6.38	.21	.24	12	8	33	.2	35	15	57	1.3	1.9	5.1
JULY	4.65	.15	.19										
AUG	4.41	.14	.22										
SEPT	3.78	.13	.22										
OCT	4.32	.14	.22										
NOV	6.38	.21	.24										
DEC	7.16	.23	.24										
TOTAL	70.73	-	-	-	-	-		-	-	-		-	-
AVG.		.19	MAXIMUM .26	53	10	81	2.5	57	18	68	2.3	4.2	2.7
No. of Samples	-	-	-	9	9	-	-	9	9	-	-	9	9

BIOCHEMICAL OXYGEN DEMAND

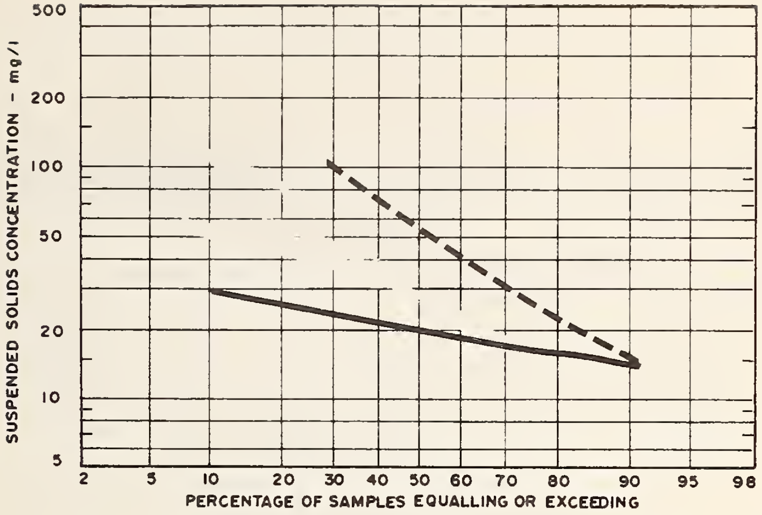


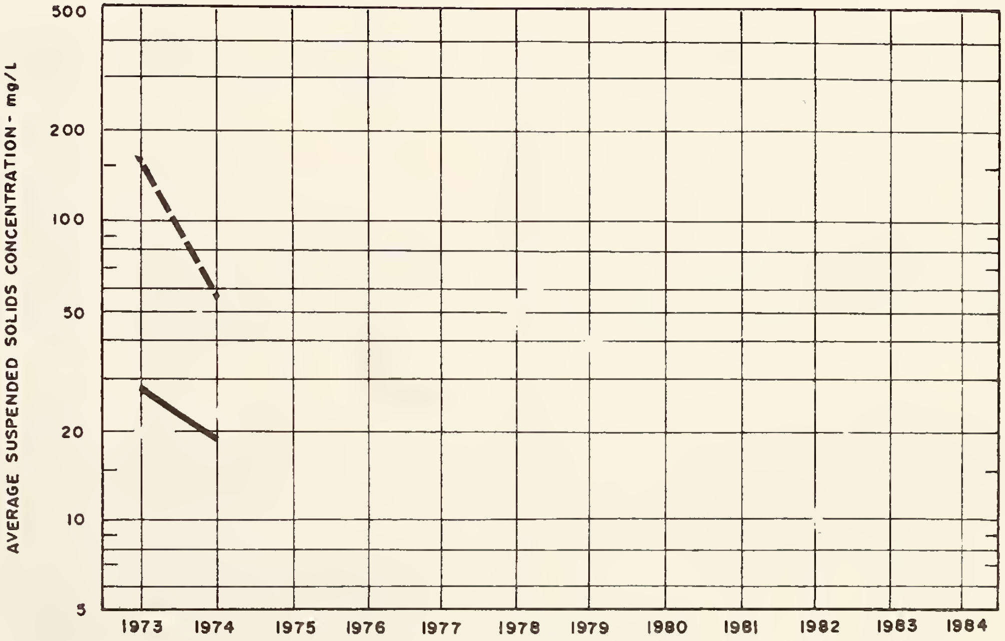


PLANT INFLUENT - - - - - - -

PLANT EFFLUENT ————

SUSPENDED SOLIDS

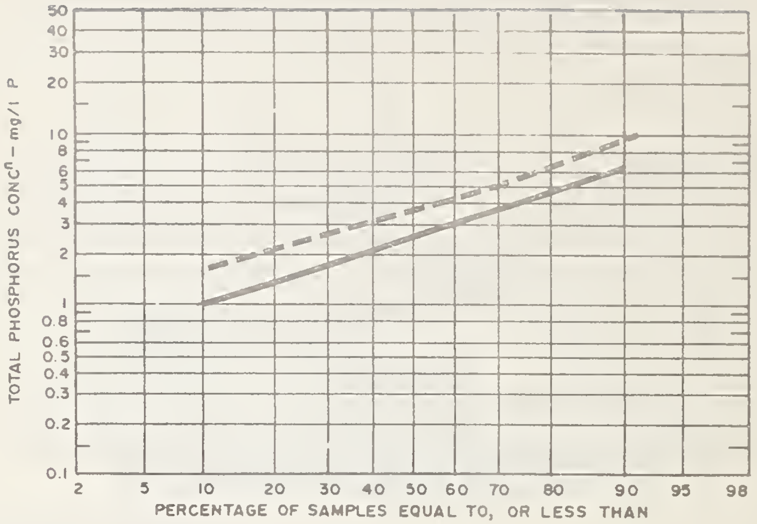


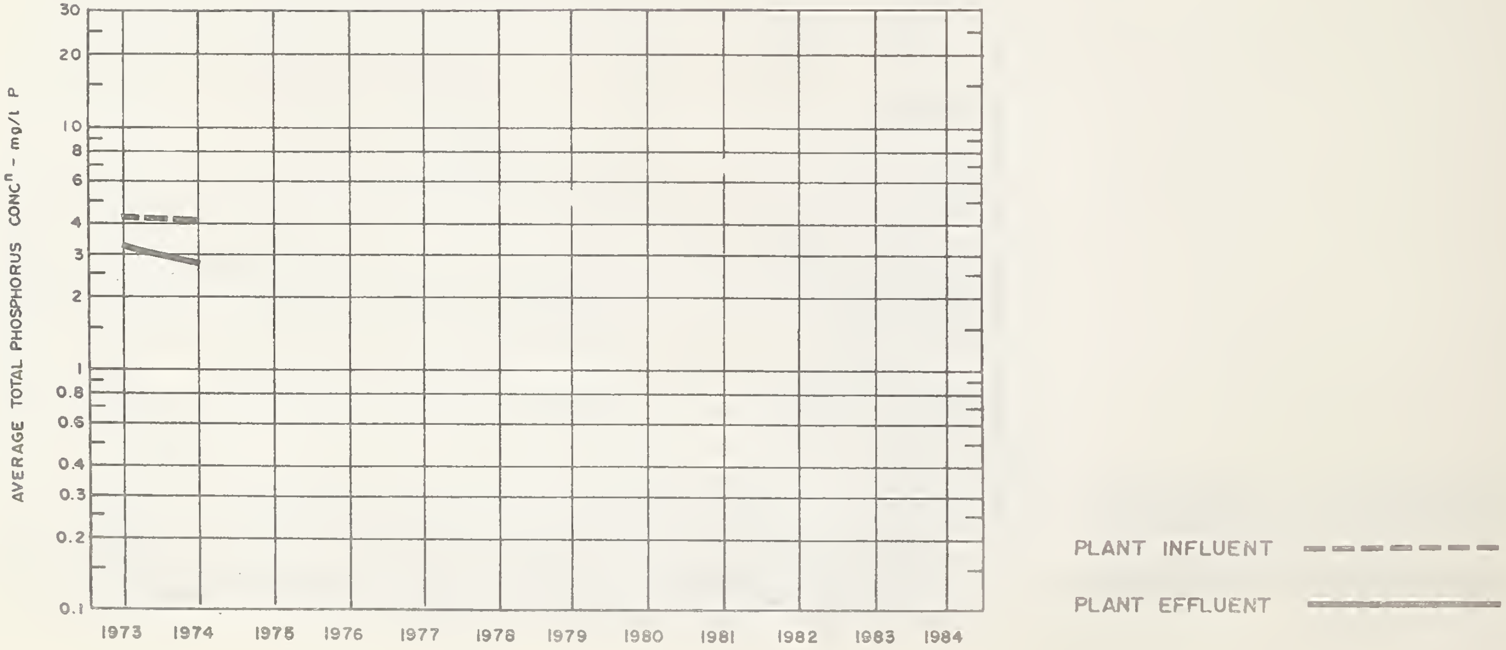


PLANT INFLUENT - - - - - -

PLANT EFFLUENT ———

PHOSPHORUS


TOTAL PHOSPHORUS CONCⁿ - mg/l P
50
40
30
20
10
8
6
5
4
3
2
1
0.8
0.6
0.5
0.4
0.3
0.2
0.1
2
5
10
20
30
40
50
60
70
80
90
95
98
PERCENTAGE OF SAMPLES EQUAL TO, OR LESS THAN


AVERAGE TOTAL PHOSPHORUS CONCⁿ - mg/l P
30
20
10
8
6
4
3
2
1
0.8
0.6
0.4
0.3
0.2
0.1
1973
1974
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
PLANT INFLUENT
PLANT EFFLUENT

TREATMENT DATA

MONTH	GRIT	CHLORINATION		AERATION			WASTE SLUDGE			AEROBIC DIGESTER			
	QUANTITY REMOVED cubic feet	Cl_2 USED 10^3 pounds	AVG. DOSAGE mg/l	MLSS. CONC mg/l	F/M day^{-1}	AIR USED $\frac{1000\ ft}{lb\ BOD}$	QUANTITY 10^3 gallons	SUSPENDED SOLIDS mg/l	VOL. SOLIDS %	QUANTITY REMOVED 10 gallons	SUSPENDED SOLIDS mg/l	VOL. SOLIDS %	AMOUNT HAULED cubic yards
JAN				600	1.27		68	3000					
FEB				1000	.32		82	4000					
MAR				1200	.35		99	10200					
APR				1300	.05		75	17300					
MAY				1000	.19		70	6200					
JUNE				1100	.05		86	3100					
JULY							112						
AUG							93						
SEPT							50						
OCT.							117						
NOV							59						
DEC							56						
TOTAL			–	–	–	–	967	–	–		–	–	
AVG.	cu. ft/mil gal			1000	.37		81	7300					

Date Due

LAB

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